



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

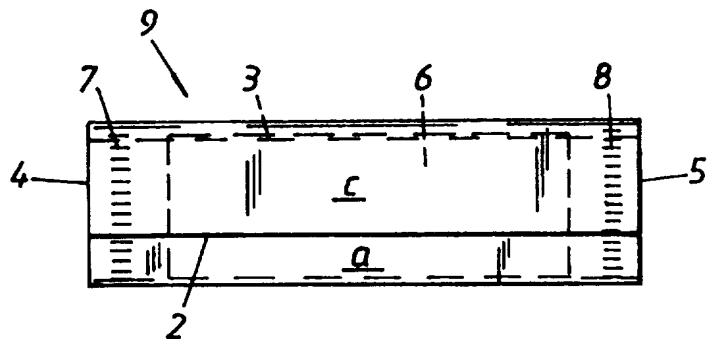
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<p>(21) International Application Number: PCT/SE96/01421</p> <p>(22) International Filing Date: 5 November 1996 (05.11.96)</p> <p>(30) Priority Data: 9503905-3                      6 November 1995 (06.11.95)                      SE</p> <p>(71) Applicant (for all designated States except US): SCA MÖLNLYCKE AB [SE/SE]; S-405 03 Göteborg (SE).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): JOUSINEN, Erkki [FI/FI]; Rentukkaraitti 6, FIN-501 01 Mikkeli 10 (FI). NILSSON, Lennart [SE/SE]; Grävlingestigen 5, S-436 55 Hovås (SE). JOHANNISSON, Ulf [SE/SE]; Eskilsbyv. 35, S-438 93 Landvetter (SE). KUUSE, Staffan [SE/SE]; P1 610, S-430 63 Hindås (SE).</p> <p>(74) Agents: HYL TNER, Jan-Olof et al.; Noréns Patentbyrå AB, P.O. Box 10198, S-100 55 Stockholm (SE).</p>	<p>(81) Designated States: JP, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Swedish).</i></p>	

(54) Title: INNER PACKAGING FOR ABDOMINAL TOWELS STERILE-PACKED IN AN OUTER PACKAGING

## (57) Abstract

The present invention relates to an inner packaging (9) for sterilized abdominal towels (6) packed in an outer packaging (11). According to the invention, the inner packaging (9) is comprised of an essentially rectangular sheet of material (1) having pairs of mutually opposing first edges (2, 3) and mutually opposing second edges (4, 5), which are folded around a bundle (6) of abdominal towels placed on the sheet such that a first part (a) of the sheet which includes one (3) of the first edges (2, 3) covers a substantial part of the abdominal towels, and a second part (c) of the sheet which includes the second (2) of the first edges (2, 3) covers part of the inwardly folded first part (a) of the sheet, and such that those sections of each edge (4, 5)

in the pair of second edges included in the first and the second inwardly folded sheet-parts (a, c) lie essentially in line with remaining sections of the second edge concerned; and in that the inner packaging (9) is closed solely by two mutually opposing joints (7, 8) which extend essentially parallel with the second edges (4, 5) of the sheet and join together the end-parts of the inwardly folded sheet-parts (a, c) and the opposing end-parts of that sheet-part (b) which contains those sections of the second edges (4, 5) towards which the folded sections of the second edges are folded.



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**INNER PACKAGING FOR ABDOMINAL TOWELS  
STERILE-PACKED IN AN OUTER PACKAGING**

5 The present invention relates to an inner packaging for abdominal towels sterile-packed in an outer packaging.

10 Abdominal or surgical towels or surgical compresses are used in surgical operations to dry-up blood and other fluids and to halt the flow of blood in surgical wounds. The abdominal towels are sterile-packed in bundles in an inner packaging which, in turn, is enclosed hermetically in a sterility-maintaining outer packaging. In surgical operations, the outer packaging is opened by a non-sterilized attendant nurse such that a sterilized working nurse is able to remove the  
15 inner packaging without touching the non-sterile outer packaging.

20 Several different types of inner packaging for abdominal towels are known to the art. A first type is comprised of a paper bag which is opened by tearing the bag, and a second type is comprised of composite packaging material comprised of a paper sheet and a plastic sheet that are joined together by a peripheral seam or join while leaving gripping flaps. Both of these packaging types have the drawback of needing  
25 two hands to open the packages. A third type is comprised of a paper sheet which is folded in a way to form a closed package by the actual folding procedure. Because of the complicated folding procedure entailed, this type of packaging is not suited for mechanical manufacture and requires a  
30 great deal of material in the making. Furthermore, this type of packaging is often difficult to open with one hand.

35 The object of the present invention is to provide an easily opened inner packaging for abdominal towels which can be produced easily and cheaply and which is not encumbered with the drawbacks of known inner packagings.

This object is achieved in accordance with the invention by means of an inner packaging for abdominal towels sterile-packed in an outer packaging, characterized in that the inner packaging is comprised of an essentially rectangular sheet of material having pairs of mutually opposing first and second edges which are folded around a bundle of abdominal towels placed on the sheet in a manner such that a first part of the sheet that includes one of the first edges covers a substantial part of the abdominal towels and a second part of the sheet that includes the other of said first edges covers a section of the inwardly folded first sheet part, and such that those sections of each edge in the pair of second edges and included in the first and the second inwardly folded sheet parts lie essentially in line with remaining sections of the second edges concerned; and in that the inner packaging is closed solely by two mutually opposing joins which extend generally parallel with the second edges of the sheet and connect the end-parts of the inwardly folded sheet-parts and the opposing end-parts of that part of the sheet which includes the sections of the second edges folded onto the folded sections of the second edges. Packaging of this kind can be easily produced mechanically in a cost-effective manner and can also be easily opened with one hand.

In a preferred embodiment, the sheet is made of paper and the end-parts containing the inwardly sections of the second edges are mutually joined by means of an easily opened fastening, said fastening being comprised of a mechanical fastening obtained by embossing the edge-parts that include the second edges.

In another variant, the readily opened fastening is a glue joint.

In a second embodiment, at least the inwardly folded second part of the sheet is perforated at its end-parts containing the second edges along lines which extend parallel with the

joins and which are further remote from the outer ends of the end-parts than said joins.

5 The invention will now be described with reference to the accompanying drawings, in which

Figs. 1-3 illustrate one embodiment of an inventive inner packaging from above and show various steps in the manufacture thereof;

10 Fig. 4 is a schematic side view of an inner packaging packed in an open outer packaging; and

15 Fig. 5 is a perspective view of a partially open inner packaging.

Shown in Figure 1 is a paper sheet 1 having a first pair of mutually opposing edges 2, 3 and a second pair of mutually opposing edges 4, 5. A bundle 6 of five abdominal towels or surgical compresses, for instance, is placed on the sheet.

20 The bundle 6 divides the sheet 1 into a first and a second part a and c respectively, these parts being located outwardly of the bundle 6 and an extension of its long edges, and an intermediate third part b. An inner packaging is formed

25 in accordance with the invention by folding the first part a of the sheet 1 in over the bundle 6, to obtain the configuration shown in Figure 2. The part c of the sheet 1 is then folded in over the bundle 6 and the inwardly folded part a.

30 Subsequent to this, the formed inner packaging is closed by joining the end-parts containing the edges 4 and 5 of the inwardly folded parts together and with corresponding end-parts of the sheet part b by means of joins or fastenings 7, 8 which extend generally parallel to the edges 4 and 5. In the illustrated case, the fastenings 7, 8 have the form of

35 a row of grooves embossed in the paper in the same way as the fastenings in coffee filter paper.

Figure 3 thus shows a finished inner packaging 9 for the bundle of abdominal towels 6. This inner packaging is then placed on a sheet, for instance a paper sheet, whereafter a sheet of weldable material, preferably a plastic material, is placed on top of the inner packaging. These sheets are then joined together with a join that extends peripherally around three edges of the sheets and that is spaced from the fourth edge of said sheet such as to leave gripping flaps which facilitate opening of the outer packaging thus formed. The packaging is then finally sterilized.

Figure 4 illustrates schematically packaging 10 which includes an outer packaging 11 comprised of a paper sheet 12 and a plastic sheet 13, and an inner packaging 9. In surgical operations, the outer packaging 11 is opened by a non-sterilized attendant nurse, a so-called circulating nurse, by gripping the aforesaid flaps and pulling the packaging apart, as indicated by arrows in Figure 4, so as to enable the inner packaging 9 to be removed by a sterilized working nurse without coming into contact with the outer surfaces of the outer packaging.

Figure 5 shows schematically how an inner packaging 9 can be opened with one hand. Because the part c of the inner packaging is fastened to the remainder of the packaging solely at its end-parts containing the edge 4 and 8, a hand can easily be inserted in between the parts a and c of the inner packaging 9, whereafter the part c can be lifted up in relation to the part a while breaking the fastening between the parts a, b and c in the end-parts.

Naturally, other types of fastenings than the schematically illustrated joins 7, 8 can be used, for instance other types of mechanical fasteners, glue joins, etc., which may be intermittent or continuous. If the sheet material used for forming the inner package is made of a weldable material the joins can of course be made by heat or ultrasonic welding,

for instance.

In one variant of the invention, the openability can be achieved with a row of perforations or some other type of  
5 weakening lines formed in the end-parts, these weakening lines being located inwardly of each join, i.e. further away from the outer ends, and extending parallel with the joins in at least the part c of the packaging.

10 It will be understood that the described embodiment can be modified within the scope of the invention. For instance, the inner packaging may be comprised of other sheet material than paper, for instance plastic material. The parts a and c of  
15 the sheet 1 may have other dimensions than those shown in Figures 1-3, for instance the part a may be smaller, such that the edge 2 in the inwardly folded position of the part a will lie further away from the long edge of the bundle 6 than in the case of the embodiment shown in Figure 2. The  
20 bundle 6 may, of course, comprise more than or fewer than five abdominal towels. Furthermore, the inwardly folded parts of the inner packaging may be joined together in stages, for instance the parts a and b folded inwardly towards one another may be joined together in conjunction with folding  
25 the part a in towards the part b to the position shown in Figure 2. The invention is therefore solely limited by the contents of the following Claims.

## CLAIMS

1. Inner packaging (9) for sterilized abdominal towels (6) packed in an outer packaging (11), **characterized** in that the inner packaging (9) is comprised of an essentially rectangular sheet of material (1) having pairs of mutually opposing first edges (2, 3) and mutually opposing second edges (4, 5), which are folded around a bundle (6) of abdominal towels placed on the sheet such that a first part (a) of the sheet which includes one (3) of the first edges (2, 3) covers a substantial part of the abdominal towels, and a second part (c) of the sheet which includes the second (2) of said first edges (2, 3) covers part of the inwardly folded first part (a) of the sheet, and such that those sections of each edge (4, 5) in the pair of second edges included in the first and the second inwardly folded sheet-parts (a, c) lie essentially in line with remaining sections of the second edge concerned; and in that the inner packaging (9) is closed solely by two mutually opposing joins (7, 8) which extend essentially parallel with the second edges (4, 5) of said sheet and join together the end-parts of the inwardly folded sheet-parts (a, c) and the opposing end-parts of that sheet-part (b) which contains those sections of the second edges (4, 5) towards which the folded sections of the second edges are folded.

25

2. An inner packaging according to Claim 1, **characterized** in that the end-parts containing the inwardly folded sections of the second edges (4, 5) are joined together by means of an easily opened fastening (7, 8).

30

3. An inner packaging according to Claim 2, **characterized** in that the sheet (1) is a paper sheet; and in that the easily opened fastening (7, 8) is a mechanical fastening produced by embossing the edge-parts that contain the second edges (4, 5).

35

4. An inner packaging according to any one of Claims 1-3,



**characterized** in that the easily opened fastening is a glue join.

5. An inner packaging according to Claim 1, **characterized**  
5 in that at least the inwardly folded second part of the sheet is perforated at its end-parts containing the second edges along lines which are parallel with the joins or fastenings and lie further from the outer ends of the end-parts than the joins.

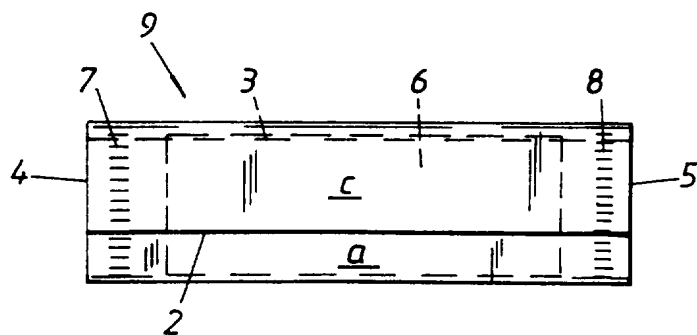
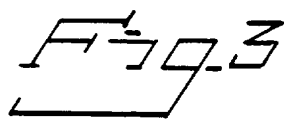
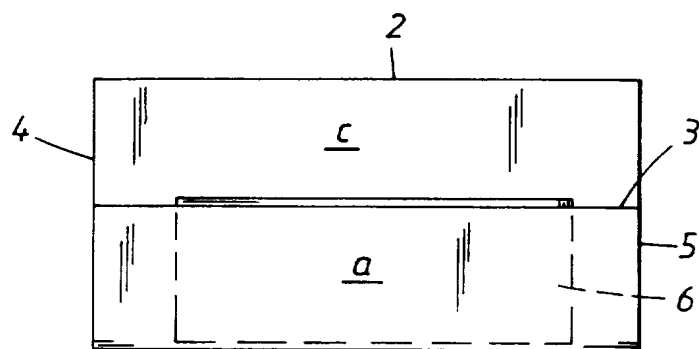
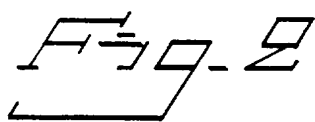
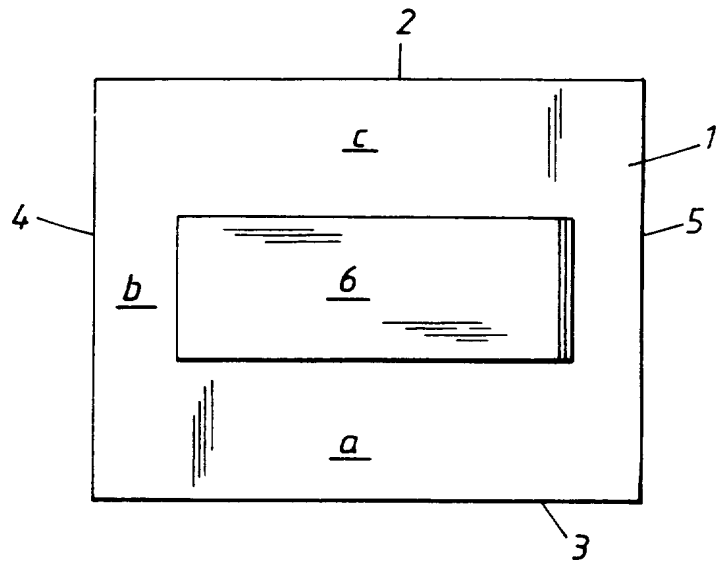


Fig. 4

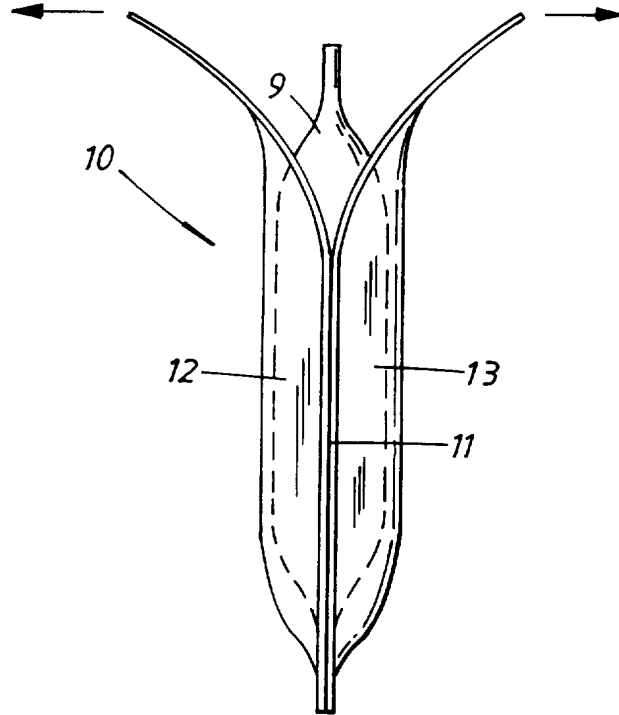
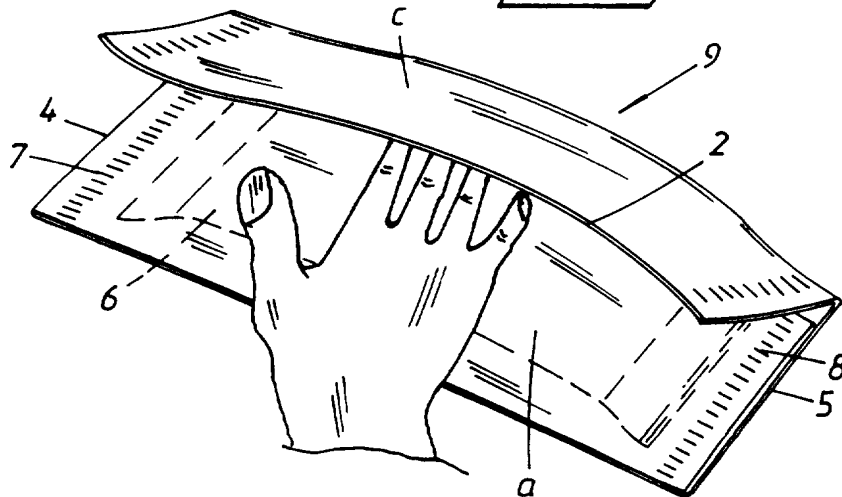


Fig. 5



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 96/01421

## A. CLASSIFICATION OF SUBJECT MATTER

IPC6: B65D 65/02, B65D 85/16

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: B65D, A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y1	GB 2273279 A (KAO CORPORATION), 15 June 1994 (15.06.94), page 21, second section; page 33, last section-page 44, first section --	1-5
Y2	GB 2277914 A (KAO CORPORATION), 16 November 1994 (16.11.94), figure 42A, page 25, last part page 58, second part; page 59 first part --	1-5
Y1	EP 0182553 A1 (PFIZER HOSPITAL PRODUCTS GROUP, INC.), 28 May 1986 (28.05.86), page 6, line 1 - line 7 --	1-5
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 Further documents are listed in the continuation of Box C. See patent family annex.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5462166 A (G.T.MINTON ET AL), 31 October 1995 (31.10.95), column 5, line 18 - line 48, figure 2 --	
A	US 4765477 A (A.FRÖIDH ET AL), 23 August 1988 (23.08.88), column 2, line 31 - line 45, figure 2 --	
A	US 2834459 A (C.I.RICKARD ET AL), 13 May 1958 (13.05.58), column 3, line 29 - line 65 --	
A	US 3095088 A (W.R.BLAIKIE ET AL), 25 June 1963 (25.06.63), column 2, line 13 - line 36 -- -----	

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

04/03/97

International application No.

PCT/SE 96/01421

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2273279 A	15/06/94	GB 2298627 A GB 9607987 D JP 5230814 A	11/09/96 00/00/00 07/09/93
GB 2277914 A	16/11/94	GB 2300402 A GB 9408870 D GB 9614536 D JP 6315504 A	06/11/96 00/00/00 00/00/00 15/11/94
EP 0182553 A1	28/05/86	SE 0182553 T3 AU 554402 B AU 4991685 A CA 1263080 A DE 3562879 A JP 1006793 B JP 1594625 C JP 61172560 A US 4603538 A	21/08/86 22/05/86 21/11/89 30/06/88 06/02/89 27/12/90 04/08/86 05/08/86
US 5462166 A	31/10/95	NONE	
US 4765477 A	23/08/88	AU 594313 B AU 5033385 A DE 3541763 A FR 2578227 A GB 2167382 A,B JP 61164975 A NL 8503239 A SE 450462 B,C SE 8405953 A	08/03/90 05/06/86 28/05/86 05/09/86 29/05/86 25/07/86 16/06/86 29/06/87 27/05/86
US 2834459 A	13/05/58	NONE	
US 3095088 A	25/06/63	NONE	